

L Lee

1645

PAGE: 1

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952A

DATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

This Raw Listing contains the General Information  
Section and up to first 5 pages.

1 <110> APPLICANT: Fainzilber, Michael M.  
2 Kits, Karel S.  
3 Burlingame, Alma L.  
4 Olivera, Baldomero M.  
5 Walker, Craig  
6 Watkins, Maren  
7 Shetty, Reshma  
8 Cruz, Lourdes J.  
9 Imperial, Julita  
10 Colledge, Clark  
11 University of Utah Research Foundation  
12 Vrije Universiteit  
13 Regents of the University of California  
14 <120> TITLE OF INVENTION: Gamma-Conopeptides  
15 <130> FILE REFERENCE: Gamma-Conopeptides  
16 <140> CURRENT APPLICATION NUMBER: US/09/210,952A  
17 <141> CURRENT FILING DATE: 1998-12-15  
18 <150> EARLIER APPLICATION NUMBER: US 60/069,706  
19 <151> EARLIER FILING DATE: 1997-12-16  
20 <160> NUMBER OF SEQ ID NOS: 47  
21 <170> SOFTWARE: PatentIn Ver. 2.0  
22 <210> SEQ ID NO 1  
23 <211> LENGTH: 42  
24 <212> TYPE: PRT  
25 <213> ORGANISM: Artificial Sequence  
26 <220> FEATURE:  
27 <223> OTHER INFORMATION: Description of Artificial Sequence:generic formula  
28 of gamma-conopeptides  
29 <220> FEATURE:  
30 <221> NAME/KEY: PEPTIDE  
31 <222> LOCATION: (1)..(13)  
32 <223> OTHER INFORMATION: Xaa at residues 1, 2, 3, 4, 5, and 6 may be  
33 des-Xaa or any amino acid; Xaa at residues 8, 9,  
34 10, 11 and 12 may be any amino acid; Xaa at  
35 residue 13 may be des-Xaa or any amino acid.  
36 <220> FEATURE:  
37 <221> NAME/KEY: PEPTIDE  
38 <222> LOCATION: (15)..(19)  
39 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino  
40 acid; Xaa at residue 19 is Glu,  
41 gamma-carboxyglutamate or Gln.  
42 <220> FEATURE:  
43 <221> NAME/KEY: PEPTIDE  
44 <222> LOCATION: (22)..(28)

ENTERED

PAGE: 2

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952ADATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

45 <223> OTHER INFORMATION: Xaa at residues 22, 23 and 24 may be any amino  
46 acid; Xaa at residue 25 may be des-Xaa or any  
47 amino acid; Xaa at residues 27, 28 and 29 may be  
48 any amino acid.

49 <220> FEATURE:

50 <221> NAME/KEY: PEPTIDE

51 <222> LOCATION: (30)..(42)

52 <223> OTHER INFORMATION: Xaa at residues 30, 31 and 32 may be des-Xaa or  
53 any amino acid; Xaa at residues 34 and 35 may be  
54 any amino acid; Xaa at residues 36, 37, 38, 39,  
55 40, 41 and 42 may be des-Xaa or any amino acid.

56 <400> SEQUENCE: 1

57 Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
58 1 5 10 15  
59 Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa  
60 20 25 30  
61 Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
62 35 40

63 <210> SEQ ID NO 2

64 <211> LENGTH: 42

65 <212> TYPE: PRT

66 <213> ORGANISM: Artificial Sequence

67 <220> FEATURE:

68 <223> OTHER INFORMATION: Description of Artificial Sequence:generic  
69 sequence of gamma-conopeptides.

70 <220> FEATURE:

71 <221> NAME/KEY: PEPTIDE

72 <222> LOCATION: (1)..(13)

73 <223> OTHER INFORMATION: Xaa at residues 1, 2, 3, 4, 5 and 6 may be des-Xaa  
74 or any amino acid; Xaa at residues 8, 9, 10, 11, 12  
75 and 12 may be any amino acid; Xaa at residue 13  
76 may be des-Xaa or any amino acid.

77 <220> FEATURE:

78 <221> NAME/KEY: PEPTIDE

79 <222> LOCATION: (15)..(22)

80 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino  
81 acid; Xaa at residue 19 is Glu,  
82 gamma-carboxyglutamate or Gln; Xaa at residue 22  
83 is Ser or Thr.

84 <220> FEATURE:

85 <221> NAME/KEY: PEPTIDE

86 <222> LOCATION: (23)..(29)

87 <223> OTHER INFORMATION: Xaa at residues 23 and 24 may be any amino acid;  
88 Xaa at residue 25 may be des-Xaa or any amino  
89 acid; Xaa at residues 27, 28 and 29 may be any  
90 amino acid.

91 <220> FEATURE:

92 <221> NAME/KEY: PEPTIDE

93 <222> LOCATION: (30)..(42)

94 <223> OTHER INFORMATION: Xaa at residues 30, 31 and 32 may be des-Xaa or

PAGE: 3

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952ADATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

any amino acid; Xaa at residues 34 and 35 may be  
any amino acid; Xaa at residues 36, 37, 38, 39,  
40, 41 and 42 may be des-Xaa or any amino acid.

W--> 98 <400> SEQUENCE: 2  
99       Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
100        1                   5                   10                   15  
101        Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa  
102        20              25                   30  
103        Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
104        35              40

105 <210> SEQ ID NO 3  
106 <211> LENGTH: 39  
107 <212> TYPE: PRT  
108 <213> ORGANISM: Artificial Sequence  
109 <220> FEATURE:  
110 <223> OTHER INFORMATION: Description of Artificial Sequence:generic formula  
111 of gamma-conopeptides  
112 <220> FEATURE:  
113 <221> NAME/KEY: PEPTIDE  
114 <222> LOCATION: (1)..(13)  
115 <223> OTHER INFORMATION: Xaa at residue 1 is any amino acid; Xaa at  
116 residues 2, 3, 4, 5 and 6 may be des-Xaa or any  
117 amino acid; Xaa at residues 8, 9, 10, 11, 12 and  
118 13 may be any amino acid.  
119 <220> FEATURE:  
120 <221> NAME/KEY: PEPTIDE  
121 <222> LOCATION: (27)..(39)  
122 <223> OTHER INFORMATION: Xaa at residues 27, 28, 29, 31, 32, 33, 34, 35, 36  
123 and 37 may be any amino acid; Xaa at residues 38  
124 and 39 may be des-Xaa or any amino acid.  
125 <220> FEATURE:  
126 <221> NAME/KEY: PEPTIDE  
127 <222> LOCATION: (15)..(19)  
128 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino  
129 acid; Xaa at residue 19 is Glu,  
130 gamma-carboxyglutamate or Gln.  
131 <400> SEQUENCE: 3  
132       Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
133        1    5                   10                   15  
134        Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp Xaa Xaa Xaa Cys Xaa Xaa  
135        20    25                   30  
136        Xaa Xaa Xaa Xaa Xaa Xaa  
137        35  
138 <210> SEQ ID NO 4  
139 <211> LENGTH: 39  
140 <212> TYPE: PRT  
141 <213> ORGANISM: Artificial Sequence  
142 <220> FEATURE:  
143 <223> OTHER INFORMATION: Description of Artificial Sequence:generic  
144 sequence of gamma-conopeptides.

PAGE: 4

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952ADATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

145 <220> FEATURE:  
146 <221> NAME/KEY: PEPTIDE  
147 <222> LOCATION: (1)...(13)  
148 <223> OTHER INFORMATION: Xaa at residue 1 is any amino acid; Xaa at  
149 residues 2, 3, 4, 5 and 6 may be des-Xaa or any  
150 amino acid; Xaa at residues 8, 9, 10, 11, 12 and  
151 13 may be any amino acid.  
152 <220> FEATURE:  
153 <221> NAME/KEY: PEPTIDE  
154 <222> LOCATION: (15)...(19)  
155 <223> OTHER INFORMATION: Xaa at residue 15 is Ser or Thr; Xaa at residues  
156 16, 17 and 18 may be any amino acid; Xaa at  
157 residue 19 is Glu, gamma-carboxyglutamate or Gln.  
158 <220> FEATURE:  
159 <221> NAME/KEY: PEPTIDE  
160 <222> LOCATION: (27)...(39)  
161 <223> OTHER INFORMATION: Xaa at residues 27, 28, 29, 31, 32, 33, 34, 35, 36  
162 and 37 may be any amino acid; Xaa at residues 38  
163 and 39 may be des-Xaa or any amino acid.  
164 <400> SEQUENCE: 4  
W--> 165 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
W--> 166 1 5 10 15  
W--> 167 Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp Xaa Xaa Xaa Cys Xaa Xaa  
W--> 168 20 25 30  
W--> 169 Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
170 35  
171 <210> SEQ ID NO 5  
172 <211> LENGTH: 34  
173 <212> TYPE: PRT  
174 <213> ORGANISM: Artificial Sequence  
175 <220> FEATURE:  
176 <223> OTHER INFORMATION: Description of Artificial Sequence: generic  
177 sequence of gamma-conopeptides.  
178 <220> FEATURE:  
179 <221> NAME/KEY: PEPTIDE  
180 <222> LOCATION: (1)...(6)  
181 <223> OTHER INFORMATION: Xaa at residues 1 and 2 may be des-Xaa or any  
182 amino acid; Xaa at residue 3 is Asp, Glu or  
183 gamma-carboxyglutamate; Xaa at residues 5 and 6  
184 may be any amino acid.  
185 <220> FEATURE:  
186 <221> NAME/KEY: PEPTIDE  
187 <222> LOCATION: (7)...(16)  
188 <223> OTHER INFORMATION: Xaa at residue 7 is Trp or 6-bromo-Trp; Xaa at  
189 residues 9, 10, 13 and 14 may be any amino acid;  
190 Xaa at residue 16 is Glu, gamma-carboxyglutamate  
191 or Gln.  
192 <220> FEATURE:  
193 <221> NAME/KEY: PEPTIDE  
194 <222> LOCATION: (28)...(34)

PAGE: 5

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952ADATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

195 <223> OTHER INFORMATION: Xaa at residues 28, 30, 31, 32, 33 and 34 may be  
 196 any amino acid.

197 <400> SEQUENCE: 5

W--> 198 Xaa Xaa Xaa Cys Xaa Xaa Xaa Phe Xaa Xaa Cys Thr Xaa Xaa Ser Xaa  
 W--> 199 1 5 10 15  
 W--> 200 Cys Cys Ser Asn Ser Cys Asp Trp Thr Tyr Cys Xaa Leu Xaa Xaa Xaa  
 201 20 25 30  
 W--> 202 Xaa Xaa

203 <210> SEQ ID NO 6

204 <211> LENGTH: 32

205 <212> TYPE: PRT

206 <213> ORGANISM: Conus pennaceus

207 <220> FEATURE:

208 <221> NAME/KEY: PEPTIDE

209 <222> LOCATION: (1)..(31)

210 <223> OTHER INFORMATION: Xaa at residue 5 is Trp or 6-bromo-Trp; Xaa at  
 211 residues 14 and 26 are Glu or  
 212 gamma-carboxyglutamate; Xaa at residue 31 is Pro  
 213 or hydroxy-Pro.

214 <400> SEQUENCE: 6

W--> 215 Asp Cys Thr Ser Xaa Phe Gly Arg Cys Thr Val Asn Ser Xaa Cys Cys  
 W--> 216 1 5 10 15  
 W--> 217 Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa Leu Tyr Ala Phe Xaa Ser  
 218 20 25 30

219 <210> SEQ ID NO 7

220 <211> LENGTH: 34

221 <212> TYPE: PRT

222 <213> ORGANISM: Conus textile

223 <220> FEATURE:

224 <221> NAME/KEY: PEPTIDE

225 <222> LOCATION: (1)..(34)

226 <223> OTHER INFORMATION: Xaa at residues 1, 7 and 34 are Trp or  
 227 6-bromo-Trp; Xaa at residues 3 and 16 are Glu or  
 228 gamma-carboxyglutamate; Xaa at residues 31 and 32  
 229 are Pro or hydroxy-Pro.

230 <400> SEQUENCE: 7

W--> 231 Xaa Leu Xaa Cys Ser Val Xaa Phe Ser His Cys Thr Lys Asp Ser Xaa  
 W--> 232 1 5 10 15  
 W--> 233 Cys Cys Ser Asn Ser Cys Asp Gln Thr Tyr Cys Thr Leu Met Xaa Xaa  
 234 20 25 30

W--> 235 Asp Xaa

236 <210> SEQ ID NO 8

237 <211> LENGTH: 39

238 <212> TYPE: PRT

239 <213> ORGANISM: Conus textile

240 <220> FEATURE:

241 <221> NAME/KEY: PEPTIDE

242 <222> LOCATION: (1)..(39)

243 <223> OTHER INFORMATION: Xaa at residues 1, 2, 4, 10 and 39 are Trp or  
 6-bromo-Trp ; Xaa at residues 19 and 31 are Glu or

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the  
 Sequence Listing to ensure that a corresponding explanation is presented in the <220> to  
 <223> fields of each sequence which presents at least one n or Xaa.

Input Set: I210952A.RAW

Line	?	Error/Warning	Original Text
57	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa X
59	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Cys X
61	W	"N" or "Xaa" used: Feature required	Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
99	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
101	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa X
103	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Cys X
132	W	"N" or "Xaa" used: Feature required	Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
134	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa
136	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Cys Ser Asn Ser Cys Asp X
165	W	"N" or "Xaa" used: Feature required	Xaa
167	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
169	W	"N" or "Xaa" used: Feature required	Xaa
198	W	"N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Xaa Xaa Phe Xaa Xaa C
200	W	"N" or "Xaa" used: Feature required	Cys Cys Ser Asn Ser Cys Asp Trp Thr Tyr C
202	W	"N" or "Xaa" used: Feature required	Xaa Xaa
215	W	"N" or "Xaa" used: Feature required	Asp Cys Thr Ser Xaa Phe Gly Arg Cys Thr V
217	W	"N" or "Xaa" used: Feature required	Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa L
231	W	"N" or "Xaa" used: Feature required	Xaa Leu Xaa Cys Ser Val Xaa Phe Ser His C
233	W	"N" or "Xaa" used: Feature required	Cys Cys Ser Asn Ser Cys Asp Gln Thr Tyr C
235	W	"N" or "Xaa" used: Feature required	Asp Xaa
248	W	"N" or "Xaa" used: Feature required	Xaa Xaa Arg Xaa Gly Gly Cys Met Ala Xaa P
250	W	"N" or "Xaa" used: Feature required	Asp Ser Xaa Cys Cys Ser Asn Ser Cys Asp V
252	W	"N" or "Xaa" used: Feature required	Met Xaa Phe Xaa Xaa Asp Xaa
264	W	"N" or "Xaa" used: Feature required	Cys Lys Thr Tyr Ser Lys Tyr Cys Xaa Ala A
266	W	"N" or "Xaa" used: Feature required	Xaa Gln Cys Val Arg Ser Tyr Cys Thr Leu P
280	W	"N" or "Xaa" used: Feature required	Asp Xaa Xaa Asp Asp Gly Cys Ser Val Xaa G
282	W	"N" or "Xaa" used: Feature required	Ala Xaa Cys Cys Ser Gly Asp Cys His Xaa T
284	W	"N" or "Xaa" used: Feature required	Xaa Val
297	W	"N" or "Xaa" used: Feature required	Gly Met Xaa Gly Xaa Cys Lys Asp Gly Leu T
299	W	"N" or "Xaa" used: Feature required	Ser Xaa Cys Cys Ser Xaa Asp Cys Xaa Gly S
312	W	"N" or "Xaa" used: Feature required	Xaa Cys Arg Ala Xaa Tyr Ala Xaa Cys Ser X
328	W	"N" or "Xaa" used: Feature required	Asn Gly Gln Cys Xaa Asp Val Xaa Met Xaa C
330	W	"N" or "Xaa" used: Feature required	Cys Cys Ser Leu Asp Cys Xaa Met Tyr Cys T
343	W	"N" or "Xaa" used: Feature required	Cys Gly Gly Xaa Ser Thr Tyr Cys Xaa Val A
345	W	"N" or "Xaa" used: Feature required	Xaa Ser Cys Val Arg Ser Tyr Cys Thr Leu P
358	W	"N" or "Xaa" used: Feature required	Asn Gly Gly Cys Lys Ala Thr Xaa Met Ser C
538	W	"N" or "Xaa" used: Feature required	ctctgccgt tgacacntca tctactctct cagtctcc
759	W	Invalid/Missing Amino Acid Numbering	
790	W	"N" or "Xaa" used: Feature required	Leu Cys Xaa Asp Tyr Thr Xaa Xaa Cys Ser H
792	W	"N" or "Xaa" used: Feature required	Ser Xaa Asn Cys Tyr Asn Gly His Cys Thr
806	W	"N" or "Xaa" used: Feature required	Xaa Cys Cys Ser
825	W	"N" or "Xaa" used: Feature required	sartgytgty cn
845	W	"N" or "Xaa" used: Feature required	athytnytnng tngcngcngt nytn
857	W	"N" or "Xaa" used: Feature required	Asp Cys Thr Ser Trp Phe Gly Arg Cys Thr V
859	W	"N" or "Xaa" used: Feature required	Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa L
871	W	"N" or "Xaa" used: Feature required	Cys Gly Gly Tyr Ser Thr Tyr Cys Xaa Val A
884	W	"N" or "Xaa" used: Feature required	Asp Xaa Thr Ser Trp Phe Gly Arg
897	W	"N" or "Xaa" used: Feature required	Xaa Thr Val Asn Ser Xaa Xaa Xaa Ser Asn S
899	W	"N" or "Xaa" used: Feature required	Xaa Xaa Leu Tyr Ala Phe Xaa Ser